IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: David E. MCDYSAN *et al.*	Confirmation No.: 7587
Application No.: 09/723,480	Group Art Unit: 2153
Filed: November 28, 2000	Examiner: Bates, K.
Customer No.: 25537	
Attorney Docket: RIC00044	

For: MESSAGE, CONTROL AND REPORTING INTERFACE FOR A DISTRIBUTED NETWORK ACCESS SYSTEM

APPEAL BRIEF

Commissioner for Patents
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is submitted in support of the Notice of Appeal dated November 28, 2007.

I. REAL PARTY IN INTEREST

The real party in interest of the present application, solely for purposes of identifying and avoiding potential conflicts of interest by board members due to working in matters in which the member has a financial interest, is Verizon

Communications Inc. and its subsidiary companies, which currently include Verizon Business Global, LLC (formerly MCI, LLC) and Cellco Partnership (doing business as Verizon Wireless, and which includes as a minority partner affiliates of Vodafone Group Plc). Verizon Communications Inc. or one of its subsidiary companies is an assignee of record of the present application.

II. RELATED APPEALS AND INTERFERENCES

An appeal has been filed in related applications Serial No. 09/723,481 and Serial No. 09/723,501.

III. STATUS OF THE CLAIMS

Claims 1-40 are pending in this appeal. No claim is allowed. This appeal is therefore taken from the final rejection of claims 1-40 on August 29, 2007.

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed invention addresses problems associated with distributed network access systems. In particular, in order to overcome the conventional disadvantages of a monolithic router architecture which are not scalable, flexible,

or extensible, monolithic, proprietary edge routers are replaced with a distributed network access system that allocates the functionality of traditional edge routers among three logical modules: a programmable access device for performing forwarding and generic traffic conditioning functions such as marking, policing, monitoring shaping and filtering; an external processor for performing service functions such as message interpretation, signaling, admission control, and policy invocation; and an access router for performing basic routing of packets between input and output ports of the access network.

Independent claim 1 provides for the following:

1. A method of communication in a network access system including an external processor (See, e.g., Fig. 2, element 42; Specification, page 11, line 23) and a programmable access device (See, e.g., Fig. 2, element 40; Specification, page 11, lines 22-23), said method comprising:

receiving a control message from the external processor (See, e.g., Fig. 2, element 42; Specification, page 11, line 23), by the programmable access device (See, e.g., Fig. 2, element 40; Specification, page 11, lines 22-23), to establish a configuration of the programmable access device (See, e.g., Specification, page 12, lines 30-31);

receiving, by the programmable access device, messages from a first network external to the network access system via a first network interface (See, e.g., Fig. 3,; Specification, page 14, lines 7-32);

communicating a first subset of the received messages from the programmable access device to the external processor for service processing in accordance with the configuration (See, e.g., Figs. 2 and 3; Specification, page 14, lines 27-32); and

routing a second subset of the received messages not communicated to the external processor from the network access system via a second network interface different from the first network interface to a second network external to the network access system, wherein the second network is different from the first network (See, e.g., Figs. 2 and 3; Specification, page 14, lines 27-32).

Independent claim 21 provides for the following:

21.A network access system, comprising:

an external processor (See, e.g., Fig. 2, element 42; Specification, page 11, line 23) that transmits a control message specifying a configuration (See, e.g., Specification, page 12, lines 30-31); and

a programmable access device (See, e.g., Fig. 2, element 40; Fig. 3; Specification, page 11, lines 22-23), that receives messages from a first

network external to the network access system via a first network interface, and that, responsive to the control message, establishes the configuration specified by the control message (See, e.g., Figs 2 and 3; Specification, page 14, lines 7-32) and communicates a first subset of the received messages to the external processor for service processing in accordance with the configuration, and forwards a second subset of the received messages not communicated to the external processor for routing, via a second network interface different from the first network interface, to a second network external to the network access system, wherein the second network is different from the first network (See, e.g., Figs 2 and 3; Specification, page 14, lines 7-32).

Independent claim 40 provides for the following:

40. A distributed router comprising:

a first network interface (See, e.g., Figs 2 and 3, elements 32, 34; Specification, page 14, lines 7-9) through which packets are communicated with a first network;

a second network interface (See, e.g., Fig. 3 "Access Network") different from the first network interface through which packets are communicated with a second network different from the first network;

a programmable access device configured to input messages from the first network via the first network interface (See, e.g., Figs 2 and 3, element 40; Specification, pages 11-12); and

an external processor (See, e.g., Fig. 2, element 42) configured to receive, from the programmable access device, a first subset of the input messages and to transmit a control message to the programmable access device specifying a configuration to control the selection of the first subset (See, e.g. Specification, page 12, lines 7-31; Figs. 2 and 3),

wherein the programmable access device forwards a second subset of the input messages not received by the external processor for routing via the second network interface to the second network (See, e.g., Specification, page 11, line23-page 12, line 14).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-4, 7-9, 12, 13, 17, 20-24, 27, 28, 31, 32, 36, 39, and 40 are anticipated under 35 U.S.C § 102(e) by *Albert et al.* (US 6,606,316)?

Whether claims 5 and 25 are obvious under 35 U.S.C. § 103 based on *Albert et al.* (US 6,606,316) in view of *Haas* (US 5,115,432)?

Whether claims 16, 18, 35, and 37 are obvious under 35 U.S.C. § 103 based on *Albert et al.* (US 6,606,316) in view of *Feldman et al.* (US 6,055,561)?

Whether claims 19 and 38 are obvious under 35 U.S.C. § 103 based on *Albert et al.* (US 6,606,316) in view of *Grant et al.* (US 5,027,269)?

Whether claims 10, 11, 29, and 30 are obvious under 35 U.S.C. § 103 based on *Albert et al.* (US 6,606,316) in view of *Gai et al.* (US 6,651,096)?

Whether claims 6, 14, 15, 26, 33, and 34 are obvious under 35 U.S.C. § 103 based on *Albert et al.* (US 6,606,316) in view of *Gibson et al.* (US 6,680,943)?

VII. ARGUMENT

A. CLAIMS 1-4, 7-9, 12, 13, 17, 20-24, 27, 28, 31, 32, 36, 39, AND 40 ARE NOT ANTICIPATED BY *ALBERT ET AL.*, BECAUSE *ALBERT ET AL.* FAILS TO TEACH THE CLAIMED FEATURE OF "ROUTING A SECOND SUBSET OF THE RECEIVED MESSAGES NOT COMMUNICATED TO THE EXTERNAL PROCESSOR FROM THE NETWORK ACCESS SYSTEM VIA A SECOND NETWORK INTERFACE DIFFERENT FROM THE FIRST NETWORK INTERFACE TO A SECOND NETWORK EXTERNAL TO THE NETWORK ACCESS SYSTEM, WHEREIN THE SECOND NETWORK IS DIFFERENT FROM THE FIRST NETWORK."

To anticipate a patent claim, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001); *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

Independent claim 1 recites, *inter alia*, "**routing** a second subset of the received messages not communicated to the external processor from the network access system **via a second network interface different from the first network interface** to a second network external to the network access system, wherein **the second network is different from the first network**." Independent claim 21 recites, *inter alia*, "...forwards a second subset of the received messages not communicated to the external processor for **routing, via a second network interface different from the first network interface**, to a second network external to the network access system, wherein the **second network is different from the first network**." Independent claim 40 recites, *inter alia*, "**a second network interface different from the first network interface** through which packets are communicated with a **second network different from the first network**...wherein the programmable access device forwards a second subset of the input messages not received by the external processor **for routing via the second network interface to the second network**."

The Examiner has rejected independent claims 1, 21, and 40 under 35 U.S.C. § 102(e) as anticipated by *Albert et al.* (US 6,606,316), contending in particular that Fig. 2A of *Albert et al.* depicts sending a packet from forwarding agent 1, at 231, to the server 221, employing a network different from a network used to send a packet from the forwarding agent 231 to the service manager 241.

The Examiner contends that the forwarding agent has three interfaces to networks, from network 210 to forwarding agent 231, from forwarding agent 231 to the service manager 241, and from forwarding agent 231 to the server 221. However, while the connection between the forwarding agent 231 and network 210 may constitute a "network interface," there is no indication that the connection of the forwarding agent to the service manager (241 or 242) or the connection of the forwarding agent to servers 220 are "network interfaces."

Moreover, the Examiner contends that the "fact that there is a separater [sic] interface no packets sent from the interface with the server can be directly received at the service manager and vise [sic] versa, this shows they are different networks, thus meeting the limitations of the claims" (page 2 of the Advisory Action of October 30, 2007). The Examiner's reasoning is flawed because *Albert et al.* fails to teach the claimed **different first and second networks** and **different first and second network interfaces**.

Even if, *arguendo*, packets processed by the forwarding agents and service managers in *Albert et al.* may, eventually, be sent on to other networks, there is no indication that servers 220 are located in a network different from any network in which the forwarding agents and service managers may be located. It is not clear from *Albert et al.* that the forwarding agents, service managers and servers are even located in a "network." However, if they are, it appears that they may be

within a single network. If so, then, at best, *Albert et al.* could only be construed as depicting two networks, viz., network 210 and the network in which the forwarding agents, service managers, and servers are located. That being the case, there is only a single network interface between these two networks, and rather than acting as an intermediary (i.e., network access system) between two networks, the forwarding agents, service managers and servers are actually within one of the networks. Accordingly, the claim features are still not met by *Albert et al.*

In the Examiner's reading of *Albert et al.*, the service manager (241or 242) is analogous to the claimed "external processor" and the forwarding agent (231 or 232) is analogous to the claimed programmable access device (PAD). Applying this rationale to the present claims, the forwarding agent may receive messages from a first network (210) external to the system of which the forwarding agent is a part (perhaps the Examiner is equating this system to the claimed network access system). Some of these received messages may be passed directly to a server in 220, while others (perhaps the Examiner equates these others to the claimed "subset"?) may be passed to a service manager (241 or 242), or "external processor" in the Examiner's parlance. But the second subset of received messages routed to the servers 220, by the language of the present claims, must be routed "**via a second network interface different from the first network interface to a second network external to the network access system, wherein**

the second network is different from the first network." Clearly, this does not occur in *Albert et al.*

The Examiner's rationale constitutes clear error because there is absolutely no disclosure in *Albert et al.* indicating that servers 220 are in a "network," that there is any "network interface" connecting the servers 220 with the forwarding agent, or that the so-called "second network" that the Examiner alleges servers 220 are in, is "external to the network access system" of which the forwarding agent is alleged to be a part. In fact, since *Albert et al.* clearly indicates element 210 as a "NETWORK," it would appear reasonable that if the separate elements 231, 232, 241, and 242 constituted another network, and if the servers 220 constituted still another network, *Albert et al.* would have also labeled these as networks. At best, even if it can be asserted that elements 220, 231, 232, 241, and 242 all comprise a network, separate from network 210, then servers 220 are part of the same network as the forwarding agent and service manager. In this case, servers 220 are **not** in a second network **"external"** to the network access system of the forwarding agent and the service manager, as required by the present claims. Since it appears that the group of servers 220 in *Albert et al.* are **within the same network** as forwarding agents 231 ad 232, and service managers 241 and 242 (the forwarding agents and the service managers constituting the claimed "network access system" in accordance with the Examiner's rationale), when the second subset of packets is

routed from, say, forwarding agent 1 to a server in the server group 220, the packets are not being routed **to a second network external to the network access system, wherein the second network is different from the first network**.

The conclusion that servers 220 in *Albert et al.* are in a different network from, and external to, the "network access system" of the forwarding agent and the service manager is without any factual basis in *Albert et al.* The Examiner merely speculates that the claimed features are taught. A rejection under 35 U.S.C. § 102(e) may not be based on speculation.

The rejection of claims 1-4, 7-9, 12, 13, 17, 20-24, 27, 28, 31, 32, 36, 39, and 40 under 35 U.S.C § 102(e) must be reversed, because *Albert et al.* does not disclose each and every limitation of the claims.

B. CLAIMS 5, 6, 10, 11, 14-16, 18, 19, 25, 26, 29, 30, 33-35, 37, AND 38 ARE NOT RENDERED OBVIOUS BY *ALBERT ET AL.* AND ANY OF THE SECONDARY REFERENCES BECAUSE NONE OF THE SECONDARY REFERENCES PROVIDES FOR THE DEFICIENCIES OF *ALBERT ET AL.*

While the references to *Haas, Feldman et al.*, *Grant et al.*, *Gai et al.* and *Gibson et al.* are cited for various claim features, none of these references provides for the deficiencies of *Albert et al.* noted above. That is, none of the secondary references suggests the claimed features of "**routing** a second subset of the received messages not communicated to the external processor from the network access system **via a second network interface different from the first network**

interface to a second network external to the network access system, wherein **the second network is different from the first network**" (claim 1), "...forwards a second subset of the received messages not communicated to the external processor for **routing, via a second network interface different from the first network interface**, to a second network external to the network access system, wherein the **second network is different from the first network**" (claim 21), or "**a second network interface different from the first network interface** through which packets are communicated with a **second network different from the first network**...wherein the programmable access device forwards a second subset of the input messages not received by the external processor **for routing via the second network interface to the second network**" (claim 40).

Accordingly, the rejection of claims 5, 6, 10, 11, 14-16, 18, 19, 25, 26, 29, 30, 33-35, 37, and 38 under 35 U.S.C § 103 must be reversed because the Examiner has erred in failing to establish a case of *prima facie* obviousness.

A conclusion of obviousness must be based on facts and may not be based on speculation. Deficiencies in the factual basis cannot be supplied by resorting to speculation. *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967). Yet, the Examiner speculates that the forwarding agent 231 in *Albert et al.* is connected by two different network interfaces to two different networks when *Albert et al.* neither

teaches nor suggests any such thing. Clearly, the Examiner's rejections are based on a flawed premise that *Albert et al.* teaches what it does not teach. Therefore, the Examiner's rejections must be reversed.

VIII. CONCLUSION AND PRAYER FOR RELIEF

For the foregoing reasons, Appellants request the Honorable Board to reverse each of the Examiner's rejections.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

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September 29, 2008
Date

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IX. CLAIMS APPENDIX

1. A method of communication in a network access system including an external processor and a programmable access device, said method comprising:

receiving a control message from the external processor, by the programmable access device, to establish a configuration of the programmable access device;

receiving, by the programmable access device, messages from a first network external to the network access system via a first network interface;

communicating a first subset of the received messages from the programmable access device to the external processor for service processing in accordance with the configuration; and

routing a second subset of the received messages not communicated to the external processor from the network access system via a second network interface different from the first network interface to a second network external to the network access system, wherein the second network is different from the first network.

2. The method of Claim 1, wherein:

receiving a control message comprises receiving a filter control message to establish a configuration of a packet header filter in the programmable access device; and

communicating messages comprises communicating network messages filtered from a packet flow by the packet header filter of the programmable access device.

3. The method of Claim 2, and further comprising limiting communication of network messages from the programmable access device to the external processor by sending the

programmable access device a message setting message interface flags in the programmable access device.

4. The method of Claim 1, wherein:

receiving a control message comprises receiving a monitor control message to establish a configuration of a monitor in the programmable access device; and

communicating messages comprises communicating reporting messages from the programmable access device to the external processor in response to the configuration of the monitor.

5. The method of Claim 4, wherein receiving a monitor control message comprises receiving a control message to establish a threshold number of allowed retransmissions.

6. The method of Claim 4, wherein receiving a monitor control message comprises receiving a threshold activity level.

7. The method of Claim l, wherein receiving a control message comprises receiving a policer control message to establish a configuration of a policer in the programmable access device.

8. The method of Claim 1, wherein receiving a control message comprises receiving a forwarding table control message to establish a configuration of a forwarding table in the programmable access device.

9. The method of Claim 8, wherein establishing a configuration of a forwarding table comprises establishing a new forwarding table in the programmable access device.

10. The method of Claim l, wherein receiving a control message comprises receiving a control message to establish a configuration of a scheduler and one or more associated output buffers in the programmable access device.

11. The method of Claim 1, wherein receiving a control message comprises receiving a shaper control message to establish a configuration of a shaper in the programmable access device.

12. The method of Claim 1, wherein:

receiving a control message from the external processor, to the programmable access device, to establish a configuration of the programmable access device comprises receiving a control message specifying a source from which packets are not to be accepted; and

the method further comprises dropping packets from the specified source by the programmable access device.

13. The method of Claim 1, and further comprising in response to service processing by the external processor, injecting a packet from the external processor into packet flow through the programmable access device.

14. The method of Claim 1, wherein

receiving a control message from the external processor, to the programmable access device, to establish a configuration of the programmable access device comprises receiving a session deletion control message; and

the method further comprises the programmable access device deleting a session specified by the session deletion control message.

15. The method of Claim 1, and further comprising the external processor signaling network hardware to establish a network connection in response to receipt of a message from the programmable access device.

16. The method of Claim 1, and further comprising exchanging keepalive messages between the external processor and the programmable access device.

17. The method of Claim 1, wherein receiving a control message comprises accessing a control processor on the external processor via an application programming interface.

18. The method of Claim 1, and further comprising in response to said control message, sending an acknowledgement from said programmable access device to said external processor.

19. The method of Claim 1, and further comprising communicating a state of a session from the programmable access device to the external processor in response to failure of a service controller servicing the session in the external processor.

20. The method of Claim 1, wherein receiving a control message comprises receiving a control message via an intermediate communication network.

21. A network access system, comprising:

an external processor that transmits a control message specifying a configuration; and

a programmable access device that receives messages from a first network external to the network access system via a first network interface, and that, responsive to the control message, establishes the configuration specified by the control message and communicates a first subset of the received messages to the external processor for service processing in accordance with the configuration, and forwards a second subset of the

received messages not communicated to the external processor for routing, via a second network interface different from the first network interface, to a second network external to the network access system, wherein the second network is different from the first network.

22. The network access system of Claim 21, wherein:

the programmable access device includes a packet header filter;

the control message comprises a filter control message that establishes a configuration of the packet header filter; and

the messages communicated by the programmable access device comprise network messages filtered from a packet flow by the packet header filter of the programmable access device.

23. The network access system of Claim 22, said external processor comprising means for limiting communication of network messages from the programmable access device to the external processor by sending the programmable access device a message setting message interface flags in the programmable access device.

24. The network access system of Claim 21, wherein:

the programmable access device comprises a monitor for network traffic;

the control message comprises a monitor control message that specifies a configuration of the monitor; and

the messages communicated by the programmable access device comprise reporting messages in accordance with the configuration.

25. The network access system of Claim 24, wherein the control message specifies a threshold number of allowed retransmissions.

26. The network access system of Claim 24, wherein the monitor control message specifies a threshold activity level.

27. The network access system of Claim 21, wherein:

the programmable access device comprises a policer, and

the control message comprises a policer control message that specifies a configuration of the policer.

28. The network access system of Claim 21, wherein the control message comprises a forwarding table control message that specifies a configuration for a forwarding table.

29. The network access system of Claim 21, wherein:

the programmable access device comprises one or more output buffers for outgoing packets and an associated scheduler; and

the control message specifies a configuration of the scheduler and the one or more output buffers.

30. The network access system of Claim 21, wherein:

the programmable access device comprises a shaper; and

the control message comprises a shaper control that specifies a configuration of the shaper.

31. The network access system of Claim 21, wherein:

the control message specifies a source from which packets are not to be accepted; and

the programmable access device comprises means for dropping packets from the specified source.

32. The network access system of Claim 21, said external processor comprising means, responsive to service processing by the external processor, for injecting a packet into packet flow through the programmable access device.

33. The network access system of Claim 21, wherein

the control message comprises a session deletion control message; and

the programmable access device comprises means for deleting a session specified by the session deletion control message.

34. The network access system of Claim 21, wherein the external processor comprises a signaling processor that signals network hardware to establish a network connection in response to a message received from the programmable access device.

35. The network access system of Claim 21, said external processor and said programmable access device each comprising means for exchanging keepalive messages.

36. The network access system of Claim 21, wherein the external processor comprises a control processor that outputs said control message and an application programming interface through which said control processor is accessed.

37. The network access system of Claim 21, said programmable access device comprising means, responsive to said control message, for sending an acknowledgement to said external processor.

38. The network access system of Claim 21, wherein:

the external processor comprises a plurality of service controllers that provide service processing; and

the programmable access device comprises means for communicating a state of a session to the external processor in response to failure of a service controller servicing the session.

39. The network access system of Claim 21, and further comprising a network coupling the external processor and the programmable access device.

40. A distributed router comprising:

a first network interface through which packets are communicated with a first network;

a second network interface different from the first network interface through which packets are communicated with a second network different from the first network;

a programmable access device configured to input messages from the first network via the first network interface; and

an external processor configured to receive, from the programmable access device, a first subset of the input messages and to transmit a control message to the programmable access device specifying a configuration to control the selection of the first subset,

wherein the programmable access device forwards a second subset of the input messages not received by the external processor for routing via the second network interface to the second network.

X. EVIDENCE APPENDIX

Appellants are unaware of any evidence that is required to be submitted in the present Evidence Appendix.

XI. RELATED PROCEEDINGS APPENDIX

Appellants are unaware of any related proceedings that are required to be submitted in the present Related Proceedings Appendix.